



NWS-00319-02.05-06/16/93
 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION III
 841 Chestnut Building
 Philadelphia, Pennsylvania 19107

Office of Superfund
 Robert Thomson, P.E.
 Mail Code 3HW71

Direct Dial (215) 597-1110
 FAX (215) 597-9890

Date: June 16, 1993

Mr. Thomas Black
 Public Affairs Officer
 Naval Weapons Station - Yorktown
 Code: 01
 P.O. Drawer 160
 Yorktown, VA 23691-0160

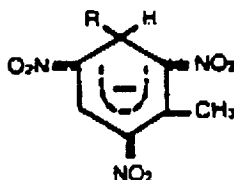
Re: Naval Weapons Station - Yorktown
 Non-time critical removal actions at sites 4, 16, and 21
 EPA comments on the draft Engineering Evaluation & Cost Analysis

Dear Mr. Black:

The U.S. Environmental Protection Agency (EPA), Region-III, Office of Superfund, has reviewed the draft Engineering Evaluation & Cost Analysis for the non-time critical removal actions at sites 4, 16, and 21 at the Naval Weapons Station - Yorktown, and we offer the following comments:

GENERAL COMMENTS:

1. For areas where explosive compounds have been burned which include TNT (and possibly RDX), media sampling analysis should be expanded to include cyanide compounds. An important aspect of TNT reactivity involves redox reactions between the reactive methyl group and the nitro groups, a type of reaction which can be initiated by various energetic stimuli including thermal, photochemical and chemical. Thus, all types of nitro compounds react easily with bases forming diverse types of products. In the case of TNT, the 2,4,6-trinitrobenzyl anion is formed initially and rapidly, and is a highly reactive species thought to be intermediate in the many reactions of TNT conducted under basic conditions. The cyanide ion can form from a complex of this anion, as generally depicted below:¹



Cyanide has been detected around the burning grounds at the former West Virginia Ordnance Works facility, where off-spec TNT was open-burned. Therefore, for site 4 please include cyanide analyses in future sampling events. *at act pile*

2. Please beware that, since the removal action areas have not been grid-sampled in their entirety, the possibility of encountering unanticipated contaminant concentrations in the soil is a real possibility. Additionally, some of the solvents disposed of in the landfills maybe listed RCRA wastes, and are

¹ Military Explosives, Technical Manual TM 9-1300-214, Department of the Army, 1964.

NWS-00319-02.05-06/193

therefore hazardous regardless of whether they fail TCLP or not. Please proceed with caution.

3. Please note that the TCLP results for the removal action areas detected 2,4,5 Trichlorophenol, while the sampling results from the draft RI did not detect this compound. Were the TCLP samples taken from the "worst" visually-contaminated areas at the removal sites?

SPECIFIC COMMENTS:

1. Page 3-11, Table 3-2

-It is recommended that the title of this table be changed to:

Risk-Based Clean-up Contaminant Removal Levels for Explosives at WPNSTA Yorktown

2. Page 3-11, Table 3-2

-Please note that the referenced table has a mixed usage of the Hazard Quotient, H. Those explosive concentration removal levels calculated for H = 1 or 10⁻⁶ cancer risk include:

2,4-DNT
HMX
RDX
2,4,6-TNT
1,3,5-TNB

Those concentration removal levels calculated for H = 0.1 include:

2,6-DNT

It maybe more appropriate to use H=1 for all the removal action level concentrations. Therefore, the contaminant removal level for 2,6-DNT should be 42 mg/kg based upon H=1.

3. Page 4-5, First Bullet

Composite sampling is not recommended by EPA. Compositing tends to dilute the sample, especially in the case of volatiles. Discrete samples, taken at specified intervals, are recommended instead. Discrete samples not only give a more accurate picture of actual field conditions, they also enable one to compare the sample results with the field location. This would enable early detection of "hot spots" within the removal action areas which may contain contaminant levels which fail TCLP analyses.

4. Page 5-8, Section 5.2.1.3

As described above, composite sampling is not recommended.

5. Page 5-22, Section 5.3.1.3

As described above, composite sampling is not recommended.

6. Page 7-2, First bullet

The manner in which the excavation boundaries are determined needs to be discussed in greater detail. Will there be a grid-sampling event performed at specified intervals for the entire removal

NWS-00319-02.05-06/16/93

action areas? With the numerous contaminants detected so far at each of the three removal action sites, the probability of discovering "hot spots" with significantly greater concentrations of contaminants, or possibly additional contaminants is real.

7. Page 7-2, Second bullet

Beware of the TCLP analytical results listed in the Testing Report. These TCLP samples were composited and, therefore, may not be illustrative of the variation in actual field conditions that maybe present at the removal action areas. Proceed with caution.

8. Page A-3, Table A-1

What are the units for Table A-1 ? EPA is assuming $\mu\text{g/l}$?

This concludes EPA's comments on the draft Engineering Evaluation & Cost Analysis for the non-time critical removal actions at sites 4, 16, and 21 at the Naval Weapons Station - Yorktown. If you have any questions concerning EPA's review comments, please feel free to call me at (215) 597-1110.

Sincerely,



Robert Thomson, PE
VA/WV Superfund Federal Facilities (3HW71)

cc: Brenda Norton (LANTDIV, Code:1822)
Jennifer Loftin (WPNSTA, Code 09E)
Glenn Markwith (WPNSTA, Code 09E)
Lisa Ellis (VDEQ, Richmond)
Andy Rola (B&V, Philadelphia)

NWS-00319-02.05-06/16/93

LAND DISPOSAL RESTRICTIONS POLICY AND RULES REGARDING
CYANIDE, DEBRIS AND CHARACTERISTIC WASTE

o RCRA waste with cyanide. These would be plating wastes, F006-F011 and F019, reactive cyanide characteristic waste, D003, and certain "F" and "X" process wastes and "P" discarded product wastes with cyanide as a constituent. A EPA policy memorandum dated April 9, 1993, from Sylvia Lowrance (OSW) and Bruce Diamond (OWPE) to the Regional HWMD Directors, states that cyanide wastes must be destroyed prior to land disposal.

The problem is, the Land Disposal Restrictions (LDR) treatment standard for most cyanide bearing RCRA waste is a numerical value. A State in another Region allowed (permitted) a commercial facility to land dispose "stabilized" cyanide waste. A Region III commercial RCRA TSDY complained to EPA HQ that the LDR did not allow stabilization to reach the numerical treatment standard, as that was dilution. The April 9, 1993 memorandum makes the explicit statement, "cyanide must be destroyed rather than stabilized in order to comply with these numerical standards and that stabilization is interpreted as impermissible dilution". The Agency used a numerical standard instead of a technology treatment standard in order to allow flexibility in the choice of many available technologies that destroy cyanide. The memorandum notes "addition of reagents such as iron or sulfur that complex cyanides in solution are considered stabilization and not destruction as is required prior to land disposal". These reagents could be used to "trap" cyanide, however the cyanide complex must still be treated by a cyanide destruction technology. In light of this policy memorandum, even in the unlikely circumstance a cyanide bearing waste is not a RCRA waste, it would be difficult to defend stabilization as the only treatment of the waste. Copies of this memorandum are available.

o The LDR Debris Case-By-Case Variance extension to May 8, 1994. On May 15, 1992 EPA published in the Federal Register (FR) a LDR Hazardous Debris Case-By-Case Capacity Variance. The Variance allowed untreated hazardous debris to be disposed in a RCRA permitted landfill unit, meeting minimum technology requirements (double liner/leachate collection) until May 8, 1993. The May 1992 Debris Variance required a notification to EPA by November 20, 1992 if an extension to May 1994 was needed. The May 1992 Variance also required on-site record keeping to justify the variance.

Since there were problems in quantifying the capacity needed for debris by November 20, 1992, and because EPA recognized there is a lack of debris treatment capacity, and due to requests from

NWS-00319 - 02.05 - 06/16/93

industry, EPA's Acting Assistant Administrator for OSWER, Richard Guimond, signed a "Notice to Renew the Hazardous Debris Case-By-Case Capacity Variance on May 7, 1993. The extension is effective May 8, 1993 and expires May 8, 1994.

There is one major change. In order to justify the variance a requestor must submit two copies of a report to EPA HQ within 90 days of debris disposal under the variance. The report must include justification of a "Good Faith Effort" to find treatment. The notice states EPA considers this effort to be documentation that at least 10 TSDFs were contacted. Debris contaminated by the RCRA "solvent" wastes F001-F005, and "Dioxin" wastes F020-F027 cannot use this variance. Such contaminated debris must be treated to the LDR treatment standards or obtain a site-specific variance. The Renewal Notice states that the Statute prohibits EPA from extending this variance beyond May 8, 1994. After May 8, 1994, either the debris waste must meet the LDR treatment standards (Published in the August 18, 1992 FR, at 40 CFR § 268.45) or obtain a site specific variance under 40 CFR § 268.44. Copies of the signed notice are available. A published FR notice and Fact sheet will be available within 3 weeks

0 Emergency LDR Rule on treatment standards for low TOC ignitable wastes D001, corrosive wastes D002. For the reader's information, high Total Organic Carbon (TOC) D001 waste has a technology treatment standard that is not affected by this Rule. On May 10, 1993, Administrator Carol Browner, signed the "Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated; Interim Final Rule". This is known as the IC Rule (ignitable and corrosive). This a very complicated rule. It is the result of much litigation, including an appeal to the Supreme Court. Since the U.S. Court of Appeals said that EPA's "deactivation" (permissible dilution) LDR treatment standard for the (low TOC) D001 "I" and D002 "C" waste did not address all hazardous constituents as required by the Statute, and the standards did not meet the intent of the law, they were invalid (vacated by the court).

The problem for EPA, is that if a RCRA hazardous waste subject to LDR does not have a treatment standard, it cannot be land disposed. If EPA did not issue this emergency rule there was the potential that millions (billions?) of gallons of D001 and D002 wastes could not be treated in surface impoundments and disposed of in the Permitted Class I Underground Injection Control (UIC) Wells.

The rule adds a definition to 40 CFR § 268.2 termed Underlying Hazardous Constituents. There is also additional record keeping requirements that in many cases require additional

NWS-00319-02.05-06/16/93

waste analysis. In general this rule requires that any low TOC D001 Ignitable and D002 Corrosive waste cannot simply be diluted to remove the characteristic. These wastes must also be treated to demonstrate that the underlying hazardous constituent(s) are also treated prior to land disposal. In general, if a D001 and/or D002 waste is treated in a Clean Water Act (CWA) regulated wastewater treatment unit (WWTU), that does not use any surface impoundments, then this rule will have no effect on those wastes. This rule's greatest impact is on the UIC wells, WWTU's with surface impoundments, and the treatment of the IC wastes in tanks that are not regulated by the CWA. The record keeping may be the biggest burden of this rule to Region III RCRA generators, TSDFs, and any remediation of such waste that is not through a CWA regulated WWTU. Copies of the signed rule are available. The FR published rule and fact sheet should be available within three weeks.

The above may appear to be long synopsis of these three announcements, but the alternative is to read the policy memorandum and the FR Notices. If you need copies of any of the above documents or have questions on them, please contact Doug Donor at 215-597-9884.

*NWS-00319 - 02.05 - 06/16/93***DNT AS A TCLP WASTE**

2,4-Dinitrotoluene (DNT) is TCLP waste D030, and has been a RCRA characteristic waste since September 1990. If it exceeds 0.1 mg/kg by the TCLP it is a characteristic hazardous waste. 2,4,6-Trinitrotoluene (TNT) is not a TCLP waste. It appears unlikely that only TNT and not DNT would be found by sampling. If TNT was found it would be a D003 "Reactive" characteristic waste. There is not yet a Land Disposal Restrictions (LDR) treatment standard for DNT, D030. Currently EPA intends to issue proposed LDR treatment standards for TCLP organic wastes by 8/31/93, with final standards by 8/31/94. At least by the current RCRA regulations, DNT could be either rendered non-hazardous, or disposed of in a RCRA landfill at any concentration. It is highly recommended that the DNT be treated by a appropriate destruction technology. The Draft LDR treatment standard for DNT is 140 mg/kg total, not TCLP. Once the proposed rule is signed, the D030 standard might be a "To Be Considered" ARAR, and after the final rule is signed, it would be a ARAR. If D003 TNT is found and needs disposal, the current LDR standard is deactivation by any appropriate means. Often for a explosive waste that is capable of detonation, the treatment would be a controlled detonation of that material. I hope this information is useful. If you have questions or need additional information please call Doug Donor.